Supplementary Material

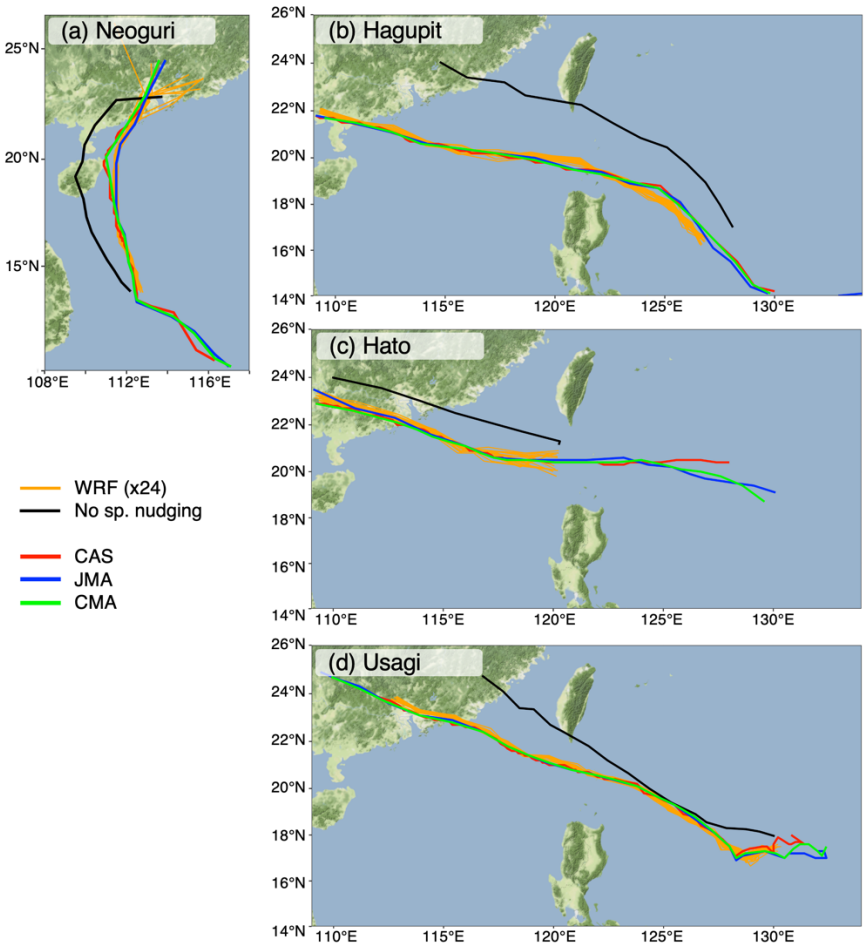

Figure S1: Comparison of WRF simulation results and observed tracks of (a) Typhoon Neoguri; (b) Typhoon Hagupit; (c) Typhoon Hato; (d) Typhoon Usagi. Red, green, and blue lines denote CAS, CMA, and JMA best tracks respectively. Twenty-four orange lines in each subplot denote the combination of 24 experimental designs. Black lines represent without the nudging setting (W6-KF-00-TD).

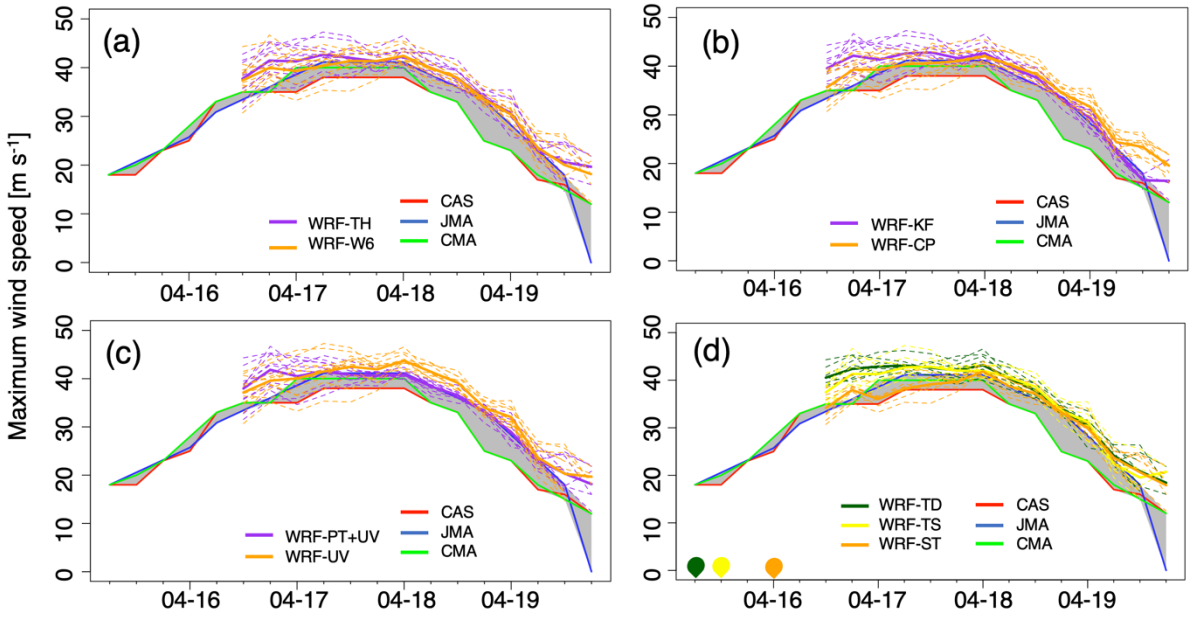

Figure S2: Comparison of WRF simulation results and observed MWS (m s^{-1}) time series for Typhoon Neoguri during the simulation period from 12 UTC April 16 to 00UTC April 20, 2008. The bold solid line represents the ensemble mean of experiments.

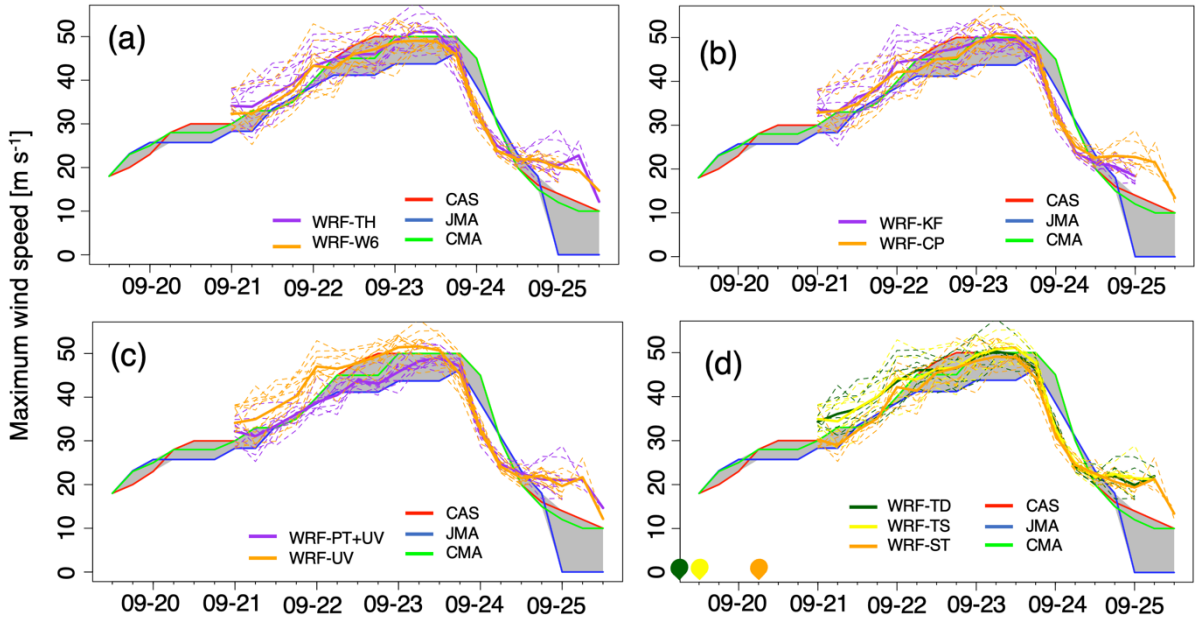

Figure S3: Same as Fig.S2, but for Typhoon Hagupit.

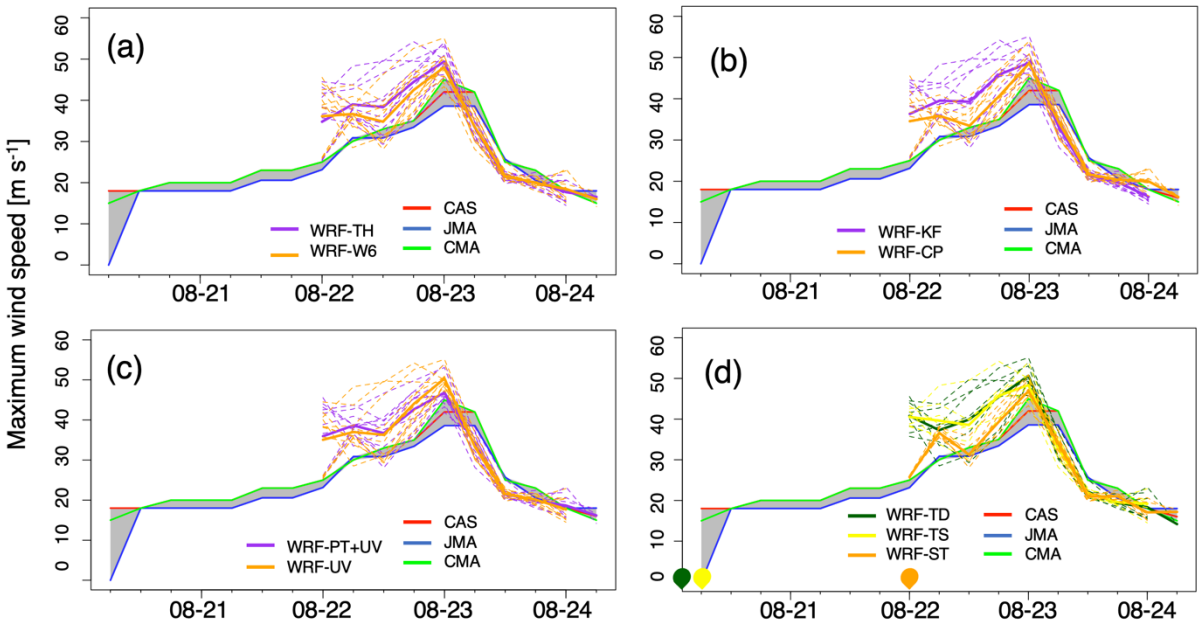

Figure S4: Same as Fig.S2, but for Typhoon Hato.

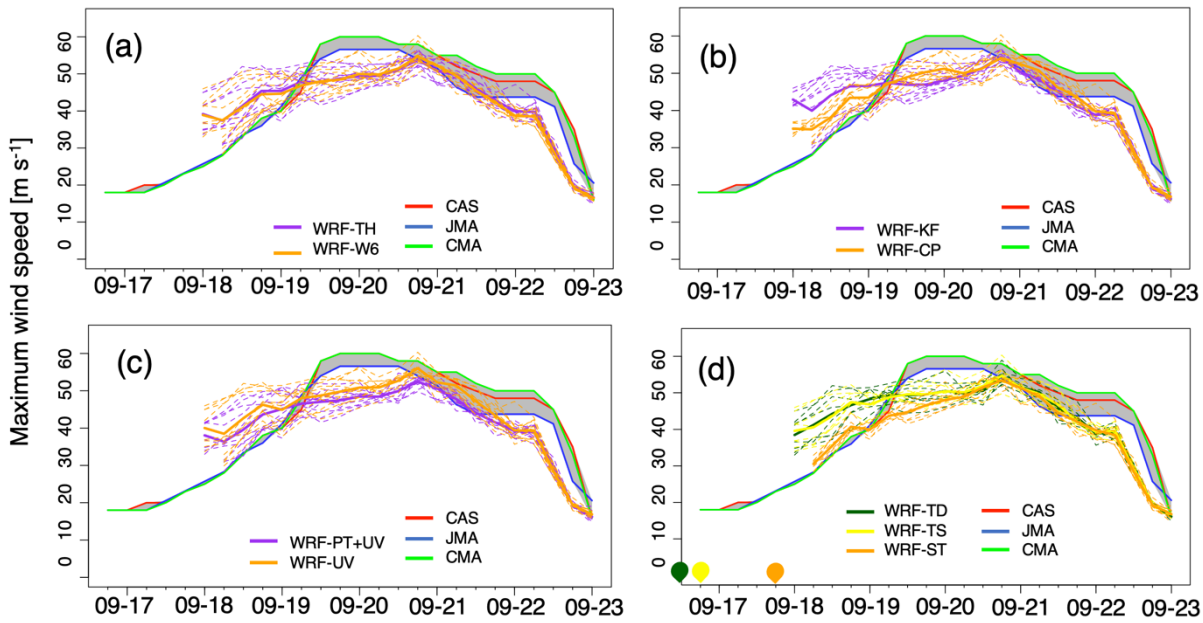

Figure S5: Same as Fig.S2, but for Typhoon Usagi.

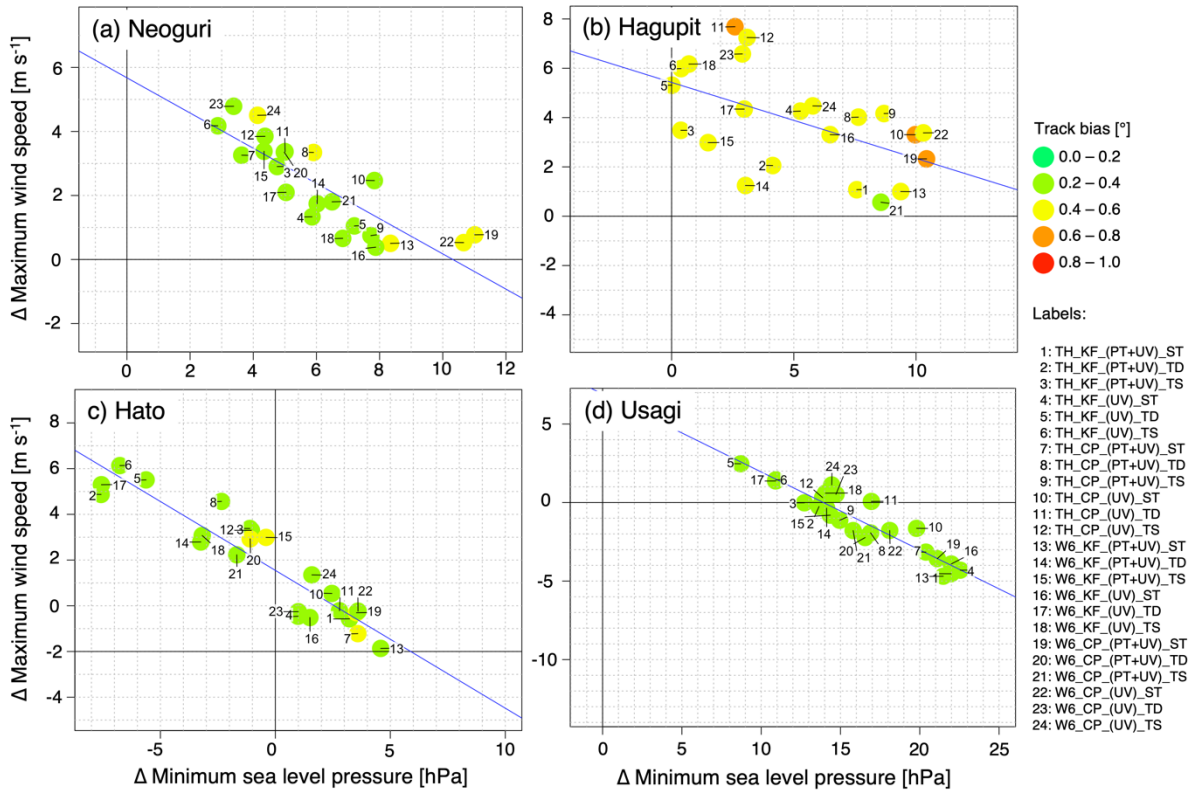

Figure S6: Same as Fig.7, but for JMA.

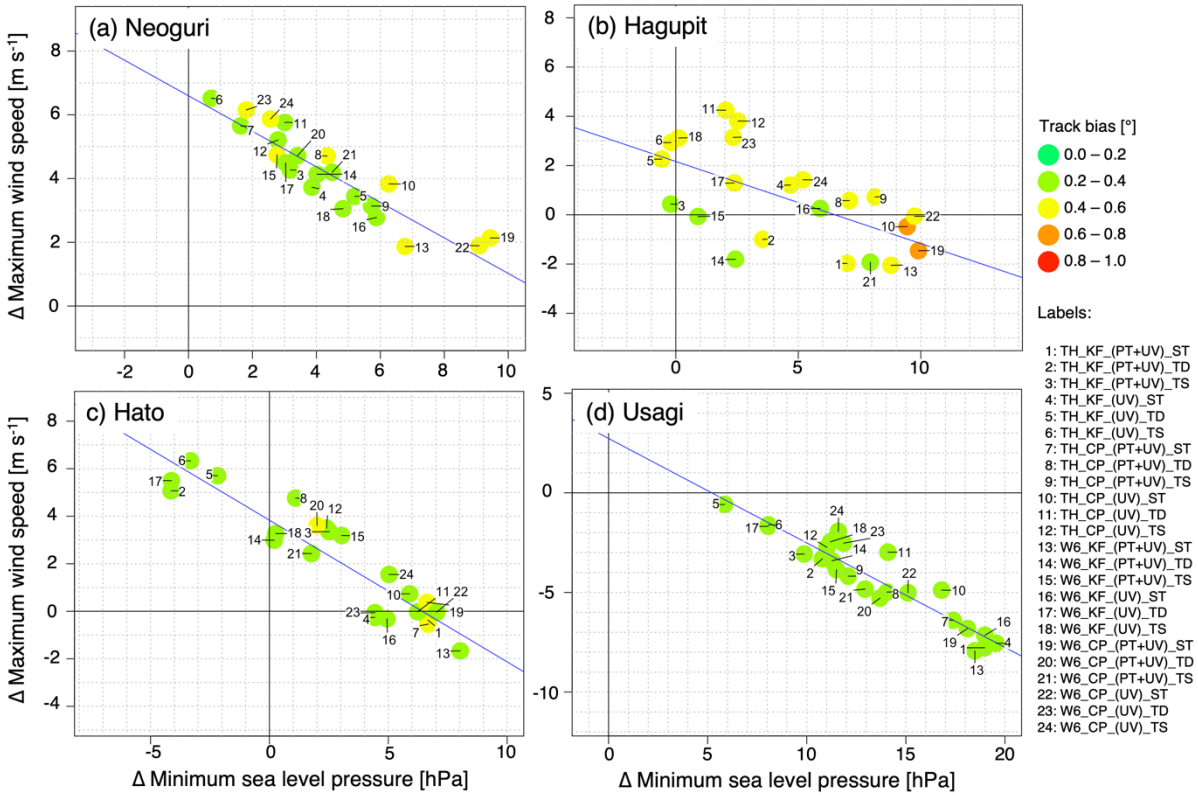

Figure S7: Same as Fig.7, but for CAS.

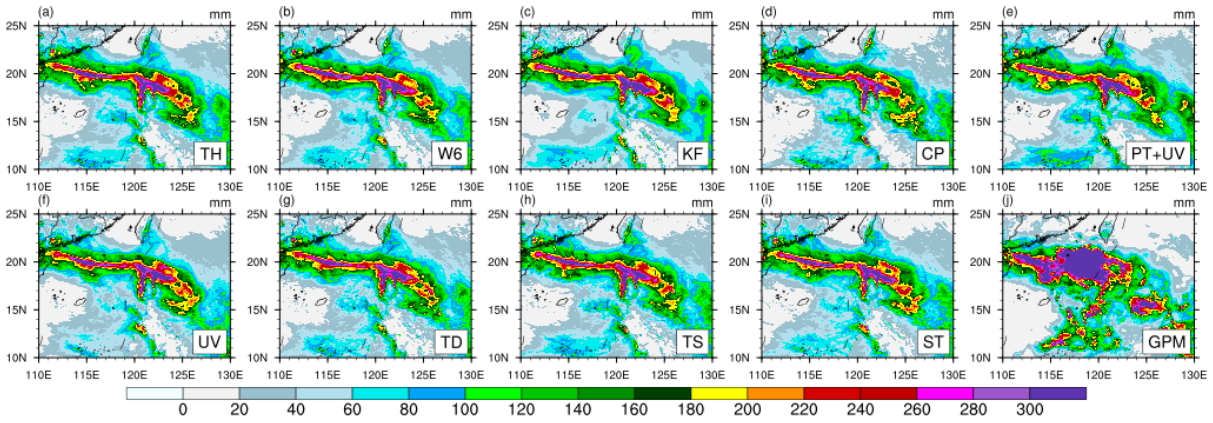

Figure S8: Same as Fig.9, but for Typhoon Hagupit.

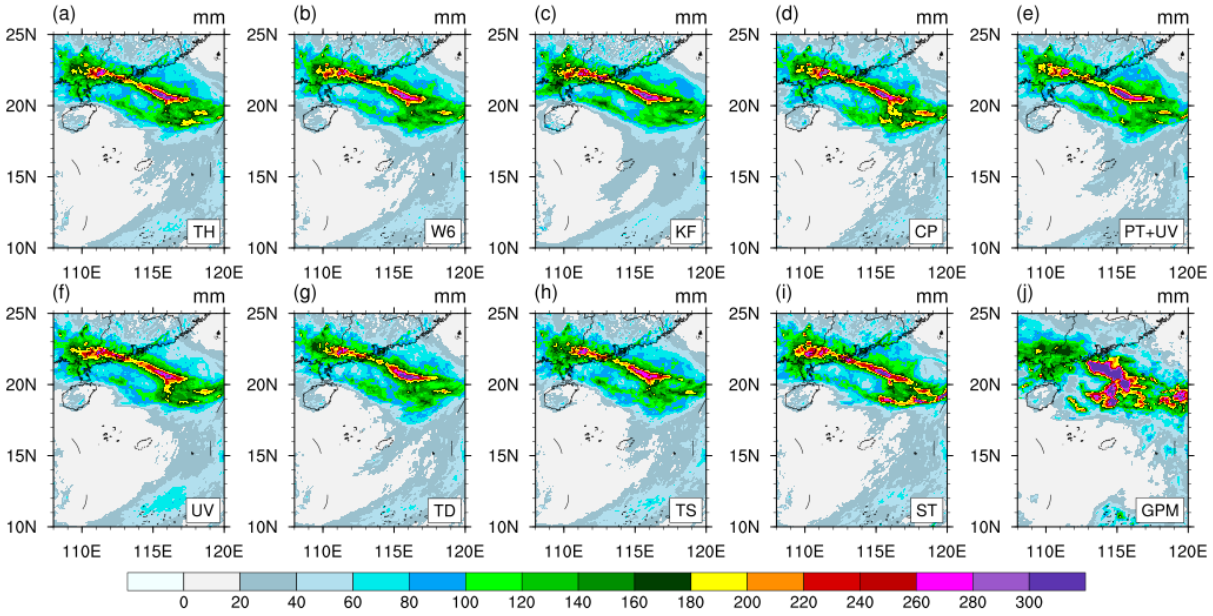

Figure S9: Same as Fig.9, but for Typhoon Hato.

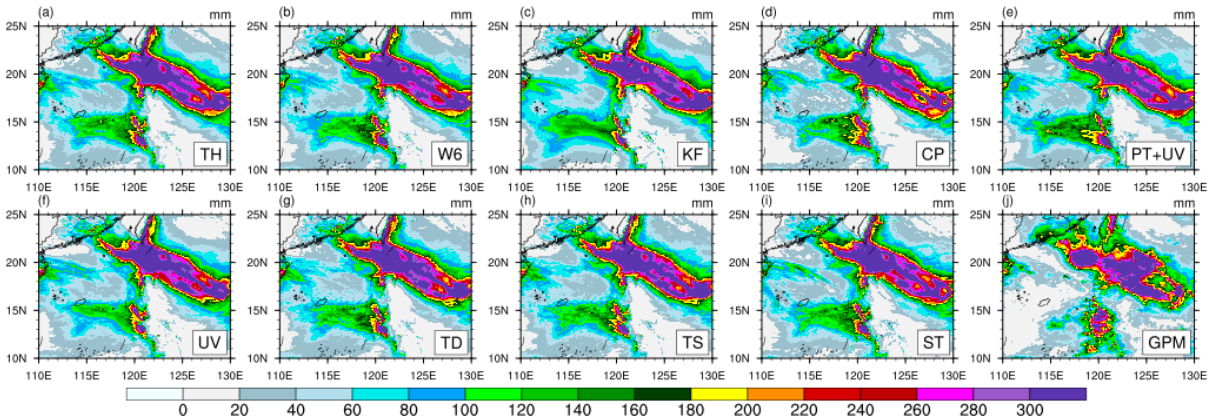

Figure S10: Same as Fig.9, but for Typhoon Usagi.

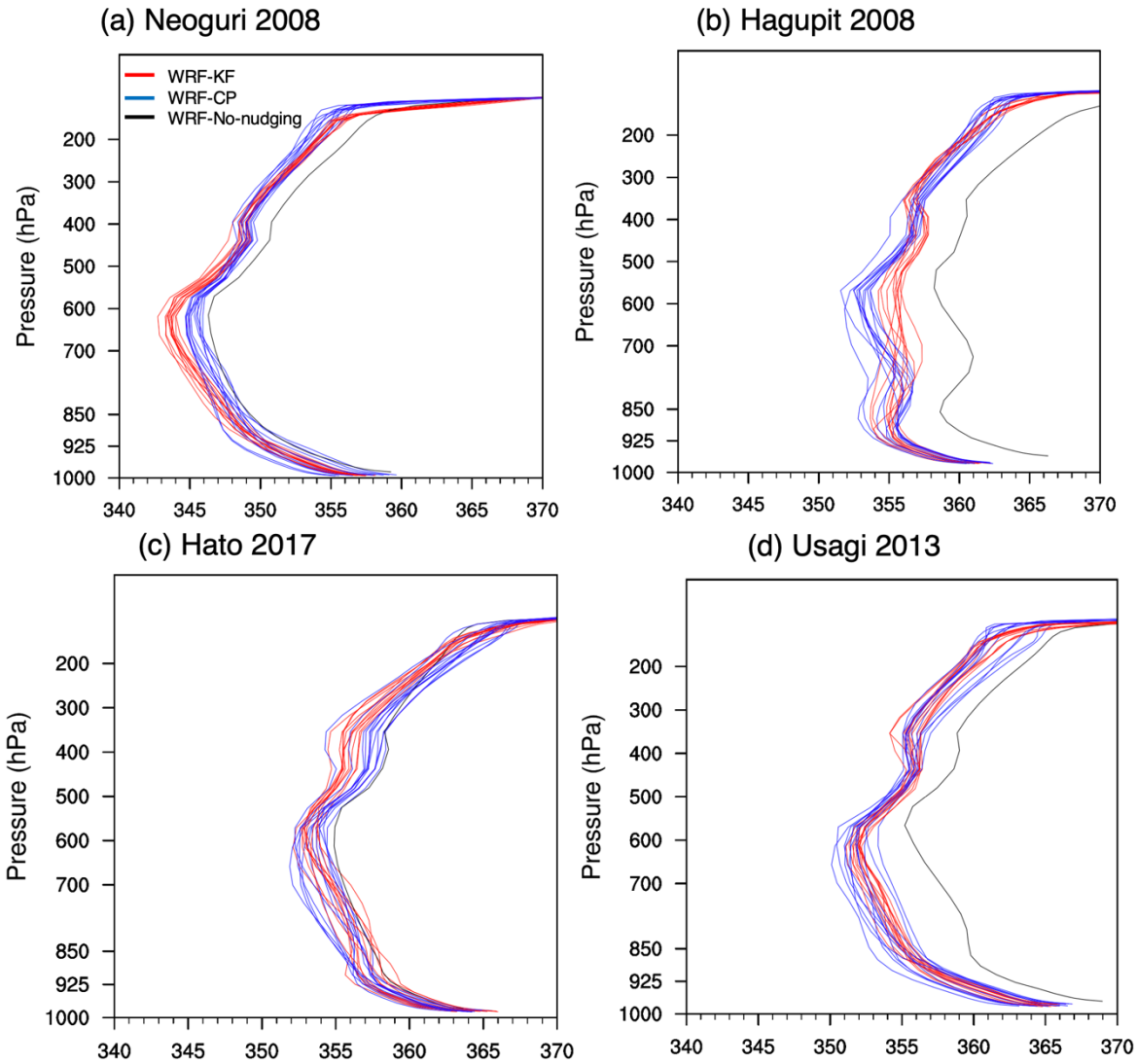

Figure S11: Equivalent potential temperature (θ_{se}) vertical distribution between PT+UV (red), UV (blue), No-nudging (black) for (a) Typhoon Neoguri at Apr 17th 00 UTC; (b) Hagupit at Sep 22nd 12 UTC; (c) Hato at Aug 23rd 00 UTC; (d) Usagi at Sep 18th 12 UTC.